

Veterinary Specialists Inc.
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**OTITIS MEDIA
(INFLAMMATION/INFECTION OF THE MIDDLE EAR)**

There are 3 stages in the inflammation of the ear. In the beginning, the external ear canal is affected and owners may notice that their pet is shaking its head or pawing at its ear. Your pet may also have an ear discharge, with or without odor. In the next stage, the disease spreads to the middle ear, which includes the ear drum. In the final stage, otitis spreads to the inner ear, which houses your pet's balance system. In the more severe stages, pets may be reluctant to open their mouths or chew and have a head tilt, balance problems, and drooping lids or eyelids. Usually most cases are caught during the first stage, and at this stage, the chances of getting your pet's ears back to normal are good.

Middle ear disease is commonly an extension from an infection in the external ear canal (otitis externa). Common primary causes of external ear disease include ear mites, foreign objects (e.g. grass awns), masses, internal disease (e.g. Cushing's or hypothyroidism) or allergies. Allergies are the most frequent cause of itching and redness in the ears. These problems lead to bacterial or yeast infections.

Bacterial and yeast infections are usually a secondary problem which then migrates from the external ear into the middle ear. The ear drum seals the infection in the middle ear making it very difficult to treat with just topical therapy. Topical therapy will treat the external infection but not do much for the middle ear infection. The infections perpetuate the disease by producing more redness, swelling, pain and wax production. With continued ear disease, the ear canal becomes thickened; causing a restriction in the opening, and treatment becomes difficult. In some animals the ear cartilage changes into bone, which results in irreversible obstructive disease in the ear canal. In these situations, surgical intervention is almost always necessary.

Your veterinarian will suspect a middle ear infection when there is a history of chronic/relapsing ear infections, when there is no ear drum present, ear cytology that shows a type of bacteria called *Pseudomonas*, and the presence of neurologic signs (i.e. head tilt, balance problems).

Treatment of middle ear disease involves not only medication and deep ear flushing (see below), but also identification and control of the primary factors such as allergies, foreign bodies, parasites, or internal diseases. Identifying the underlying cause can take time and a variety of diagnostic tests. It is important to find the cause or the ear infection can worsen and spread farther into the ear (i.e. the inner ear) or continue to reoccur.

Treatment of middle ear disease entails deep ear flushing; and medications, both topical and oral. Routine ear cleaning will not be able to remove the infection and debris in the middle ear, especially when the ear drum is still intact. Deep ear flushing entails placing your pet under general anesthesia and perforating the ear drum to gain access into the middle ear and perform the flush (i.e. deep ear flush). Most pets with middle ear infections either have no ear drum or unhealthy/scarred ear drums. The ear drum in a healthy ear will usually regrow in 7-10 days, but in an ear with chronic problems it may take several weeks. There may be some loss of hearing; however, there may have already been some loss of hearing due to the infection in the ear.

When performing the deep ear flush, a culture of the middle ear is usually taken in order to identify what type of bacteria is present. Once the ear has been flushed well, topical medication is applied. Your pet will be sent home with topical medication as well oral medication. Since a middle ear infection is a problem deeper in the ear, systemic (oral) antibiotics will be recommended. If a yeast infection has been found, then

oral antifungal medication will be recommended. Treatment with topical medication is usually given for about 4 weeks. Oral medications are given for a minimum of 8 weeks and possibly longer.

It is not uncommon to repeat the deep ear flushes several times. As well, depending on how the pet responds, changes in topical and oral therapy may be necessary. Sometimes resistant bacteria (i.e. *Pseudomonas*) are encountered that may lead to several ear flushes and changes in medications. In some cases, the ear canals may have such chronic changes that it makes it very difficult to bring the infection under control or to completely treat it. In some cases, failure to respond to therapy (especially with resistant bacteria) may lead to surgical intervention.

The most important point to remember is that identifying the underlying cause will prevent the infection from relapsing.

REMEMBER: THE GOAL IN TREATING THE EAR IS TO RESOLVE THE UNDERLYING PROBLEM AND TO RETURN THE EAR CANAL TO NORMAL.